AMENDMENTS TO THE CLAIMS

Listing of claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Claim 1 (Currently Amended): A method for manufacturing a semiconductor device for forming a wiring by a dual damascene method, the method comprising the steps of:

forming a mask for a wiring trench patterned to be a wiring trenches pattern on an interlayer dielectric film;

forming a mask for a via hole patterned to be a via holes pattern on the mask for the wiring trench by using a multilayered resist;

forming a hole shallower than a thickness of the interlayer dielectric film in the interlayer dielectric film by processing the interlayer dielectric film, using the mask for the via hole;

forming a wiring trench in the interlayer dielectric film by processing the interlayer dielectric film, using the mask for the wiring trench, and simultaneously forming a via hole by passing the hole through a base layer; and

embedding a wiring material in the wiring trench and said via hole.

Claim 2 (Currently Amended): The method for manufacturing the semiconductor device according to claim 1, wherein

said step of forming the mask for the wiring trench includes the steps of:

forming a first, a second, and a third hard mask in this order on the interlayer dielectric film; and

processing the third hard mask so as to be a ~~plain~~ plane shape to the wiring trench, and

wherein the second hard mask is made from a different material from the first and the third hard mask.

Claim 3 (Currently Amended): The method for manufacturing the semiconductor device according to claim 2, wherein

each of the first to the third hard mask ~~are~~ is made from one kind of inorganic material selected from the group consisting of silicon nitride, silicon dioxide, silicon carbide, amorphous hydrogenated silicon carbide, silicon carbide nitride, organo-silicate glass, silicon rich oxide, tetraethylorthosilicate glass, phosphosilicate glass, organic siloxane polymer, carbon doped silicate glass, hydrogen doped silicate glass, silsesquioxane glass, spin-on glass, and fluorinated silicate glass.

Claim 4 (Original): The method for manufacturing the semiconductor device according to claim 2, wherein

the first hard mask is between 30 nm and 100 nm thick;

the second hard mask is between 50 nm and 200 nm thick; and

the third hard mask is between 30 nm and 100 nm thick.

Claim 5 (Original): The method for manufacturing the semiconductor device according to claim 1, wherein

the interlayer dielectric film is made from an organic material.

Claim 6 (Original): The method for manufacturing the semiconductor device according to claim 1, wherein

said step of forming the mask for the via hole includes a step of forming an organic film, an inorganic film, and a photoresist layer in this order on the mask for the wiring trench.

Claim 7 (Original): The method for manufacturing the semiconductor device according to claim 6, wherein

a spin-on glass film is formed as the inorganic film.

Claim 8 (Currently Amended): The method for manufacturing the semiconductor device according to claim 6, wherein

a thickness of the inorganic film is thinner than a ~~total film~~ thickness ~~from the first to the third hard mask~~ of the mask for the wiring trench.

Claim 9 (Original): The method for manufacturing the semiconductor device according to claim 6, wherein

the organic film is between 100 nm and 400 nm thick;

the inorganic film is between 30 nm and 200 nm thick; and

the photoresist layer is between 100 nm and 300 nm thick, supposing the interlayer dielectric film is between 100 nm and 600 nm thick.

Claim 10 (Original): The method for manufacturing the semiconductor device according to claim 6, wherein

said step of forming the mask for the via hole includes the steps of:

processing the photoresist layer so as to be a plane shape to the via hole;

processing the inorganic film so as to be a plane shape to the via hole by using the photoresist layer as a mask; and

processing the organic film so as to be a plane shape to the via hole by using the inorganic film as a mask, and simultaneously removing the photoresist layer.

Claim 11 (Currently Amended): The method for manufacturing the semiconductor device according to claim 10, wherein

said step of forming the hole includes a step of processing the ~~first to the third hard~~ mask for the wiring trench so as to be a plane shape to the via hole by using the organic film as a mask, and simultaneously removing the inorganic film, and

the organic film is removed while forming the hole.

Claim 12 (Original): The method for manufacturing the semiconductor device according to claim 1, wherein

said step of forming the mask for the via hole includes a step of forming an organic film and a photoresist layer containing Si in this order on the mask for the wiring trench.

Claim 13 (Original): The method for manufacturing the semiconductor device according to claim 12, wherein

said step of forming the mask for the via hole includes the steps of:

processing the photoresist layer so as to be a plane shape to the via hole; and

processing the organic film so as to be a plane shape to the via hole by using the photoresist layer as a mask.

Claim 14 (Currently Amended): The method for manufacturing the semiconductor device according to claim 13, wherein

said step of forming the hole includes a step of processing the ~~first to the third hard~~ mask for the wiring trench so as to be a plane shape to the via hole by using the organic film as a mask, and simultaneously removing the photoresist, and

the organic film is removed while forming the hole.

Claim 15 (Original): The method for manufacturing the semiconductor device according to claim 6, wherein

a thickness of the organic film is thinner than that of the interlayer dielectric film.

Claim 16 (Original): The method for manufacturing the semiconductor device according to claim 6, wherein

a film exposed by light at a wavelength of 248 nm, 193 nm, or 157 nm is formed as the photoresist layer.

Claim 17 (Original): The method for manufacturing the semiconductor device according to claim 12, wherein

a thickness of the organic film is thinner than that of the interlayer dielectric film.

Claim 18 (Original): The method for manufacturing the semiconductor device according to claim 12, wherein

a film exposed by light at a wavelength of 248 nm, 193 nm, or 157 nm is formed as the photoresist layer.